



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,164	03/31/2004	Ching-Lung Yang	Q80864	4473
23373	7590	04/25/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			PIZIALI, ANDREW T	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 04/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/813,164

Applicant(s)

YANG, CHING-LUNG

Examiner

Andrew T. Piziali

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6,7 and 11-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,7 and 11-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 2/28/2006 has been entered. The examiner has withdrawn the objection to claim 18 based on the amendment to claim 18. The examiner has withdrawn the 35 USC 112 rejections of claims 20-22 based on the amendments to claims 20 and 21 and the cancellation of claim 22. The examiner has withdrawn the rejections of claims 2, 5, 8-10 and 22-24 based on the cancellation of these claims. Applicant's amendment necessitated the new grounds of rejection presented in this Office action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 4,040,937 to Iijima et al. (hereinafter referred to as Iijima).

Regarding claims 12 and 13, Iijima discloses a compound material at least comprising a pair of overlapped first high heat conductive layer (1) and first conductive EMI shielding layer (6 or 7), wherein the first EMI shielding layer comprises a sub-layer comprising a plurality EMI shielding blocks thereby forming an EMI shielding net (see entire document including column 5, line 7 through column 6, line 9 and Figures 5-8). Considering that both layers are conductive,

Art Unit: 1771

the compound material inherently possesses a heat conducting track through the compound. It is noted that the examiner interprets the claimed "high heat conductive layer" as a layer of material that is thermally conductive.

The Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Regarding claim 13, Iijima discloses that the shielding blocks are a plurality of EMI shielding blocks comprising EMI shielding material (column 5, lines 53-62 and Figures 5-8).

4. Claims 1, 3-4, 6-7 and 11-20 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,632,942 to Yeh et al. (hereinafter referred to as Yeh) in view of (to show inherency) USPN 4,598,017 to Bayer et al. (hereinafter referred to as Bayer).

Regarding claims 1, 3-4, 6-7 and 11-20, Yeh discloses a compound material comprising a first high heat conductive layer (1), adapted to conduct thermal capacities from a correspondent electronic device because it is conductive, a first EMI shielding layer (2), capable of shielding electromagnetic interferences from outside of the correspondent electronic device because the layer possesses a plurality of EMI shielding blocks, wherein the EMI shielding layer is superposed to the first high heat conductive layer (see entire document including column 5, line

Art Unit: 1771

9 through column 7, line 47 and Figures 1C and 3). Yeh discloses that a second high heat conductive layer may be superposed to the first EMI shielding layer opposite to the first high heat conductive layer and that a second EMI shielding layer may be superposed to the second high heat conductive layer opposite to the first EMI shielding layer (Figure 1C). Yeh discloses that the first and second EMI shielding layers may comprise a heat conductive sublayer and a plurality of EMI shielding blocks therein, the EMI shielding blocks of the first and second EMI shielding layers being separately and alternately arranged in the corresponding heat conductive sub-layers and staggered from the corresponding EMI shielding blocks in an overlapped or vertical direction thereof (Figure 1C and 3). Yeh discloses that the first high heat conductive layer (1) can comprise aluminum oxide (column 5, lines 19-25). Bayer discloses that aluminum oxide is a highly heat conductive material (column 4, lines 16-28).

Regarding claims 3-4, 6-7 and 11, Yeh discloses that the arrangement of the compartmented portions of the first EMI shielding layer may be tessellated (Figure 3).

Regarding claims 4 and 13-20, Yeh discloses that the plurality of EMI shielding blocks comprise EMI shielding material (column 7, lines 23-29).

Regarding claims 6-7, 11 and 20, Yeh discloses that the EMI shielding blocks may be made from electromagnetic wave absorbing material (column 7, lines 23-29).

Regarding claims 7, 11 and 15-20, Yeh does not specifically mention planography printing, but Yeh does disclose that the EMI blocks may be formed by a substantially identical method such as screen printing (column 6, lines 52-57). It is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. . Even though product-by-process claims are limited by and defined by the process, determination

Art Unit: 1771

of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show obvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

Regarding claim 11, Yeh discloses that a third high heat conductive layer may be overlapped on the second EMI shielding layer and opposite to the second heat conductive layer (Figure 1C).

Regarding claims 12-20, considering that both the first heat conductive layer and the first EMI shielding layer are conductive, the compound material inherently possesses a heat conducting track through the compound.

Regarding claims 14-20, Yeh discloses EMI shielding blocks of the first and second EMI shielding layers being separately and alternately arranged in the corresponding heat conductive sub-layers and staggered from the corresponding EMI shielding blocks in an overlapped or vertical direction thereof (paragraph bridging columns 6 and 7 and Figure 1C and 3).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,040,937 to Iijima (as applied to claims 12 and 13 above).

Regarding claims 14-18 and 20, Iijima does not specifically show EMI shielding blocks separately arranged, but Iijima does disclose that the shape and the arrangement of the holes may be selected arbitrarily (column 6, lines 6-9). Iijima discloses that the EMI shielding layer functions to elevate electrical conductivity and to present reinforcing and weight adjusting effects (column 5, lines 34-37). Iijima also discloses that the holes are present so that the resin on both sides of the EMI shielding layer can be united to increase adhesion strength (column 5, lines 53-62). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the square holes of Figure 5 larger, such as separately arranged, because it is understood by one of ordinary skill in the art that the size of the squares determines the adhesion strength between the resin layers, the electrical conductivity of the compound material, the weight of the compound material, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claims 15-18 and 20, Iijima discloses a variety of methods including an insert molding method (column 7, line 16 through column 8, line 6).

Regarding claims 16-18 and 20, Iijima discloses that a second EMI shielding layer may be overlapped on the first conductive layer and opposite to the first EMI shielding layer (column 5, lines 42-52 and Figures 3-4).

Regarding claims 17-18 and 20, Iijima discloses that second EMI shielding layer may be identical to the first EMI shielding layer (Example 2 and Figure 3).

Regarding claim 20, Iijima discloses that the EMI shielding blocks may be made from copper or aluminum.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,040,937 to Iijima as applied to claims 14-18 and 20 above, and further in view of USPN 6,720,082 to Hashimoto et al. (hereinafter referred to as Hashimoto).

Iijima does not specifically mention the use of aluminum oxide to make the resin conductive, but Iijima discloses that an electrically conductive material such as carbon powder or a metal powder may be used (column 6, lines 47-62). Hashimoto discloses that in addition to carbon powders and metal powders, it is known in the conductive resin art that aluminum oxide particles may be added to a resin to make it conductive (column 12, lines 40-54). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the conductive powder from any suitable conductive material, such as Al_2O_3 , because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

Response to Arguments

8. Applicant's arguments filed 2/28/2006 have been fully considered but they are not persuasive.

The applicant asserts that Iijima does not teach or suggest the claimed EMI shielding layer because Iijima uses a metal wire net. The examiner respectfully disagrees. Although Iijima does disclose the use of a metal wire net (column 5, lines 7-21), Iijima also discloses that a sheet of metal plate may also be used instead of a metal wire net (column 5, lines 53-62). Iijima discloses that a plurality of perforations are preferably provided through the metal plate (column 5, lines 53-62 and Figure 5).

The applicant asserts that Iijima does not teach or suggest the claimed heat conducting track. The examiner respectfully disagrees. Considering that the high heat conductive layer and the EMI shielding layer are both conductive, the compound material inherently possesses a heat conducting track through the compound. The applicant has not show, or attempted to show, how the compound material lacks the claimed conducting track.

The Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Regarding claims 14-18 and 20, the applicant asserts that Iijima does not teach or suggest EMI shielding blocks separately arranged. The examiner respectfully disagrees. Iijima does not specifically show EMI shielding blocks separately arranged, but Iijima does disclose that the shape and the arrangement of the holes may be selected arbitrarily (column 6, lines 6-9). Iijima discloses that the EMI shielding layer functions to elevate electrical conductivity and to present reinforcing and weight adjusting effects (column 5, lines 34-37). Iijima also discloses that the holes are present so that the resin on both sides of the EMI shielding layer can be united to increase adhesion strength (column 5, lines 53-62). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the square holes of Figure 5 larger, such as separately arranged, because it is understood by one of ordinary skill in the art that the size of the squares determines the adhesion strength between the resin layers, the electrical conductivity of the compound material, the weight of the compound material, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

The applicant asserts that Yeh does not teach or suggest the claimed heat conducting track. The examiner respectfully disagrees. Considering that the high heat conductive layer and the EMI shielding layer are both conductive, the compound material inherently possesses a heat conducting track through the compound. The applicant has not show, or attempted to show, how the compound material lacks the claimed conducting track.

The applicant asserts that there is no motivation to combine Yeh and Bayer. Applicant's argument is not commensurate in scope with the current rejection. Bayer is simply cited to disclose that aluminum oxide is inherently a highly heat conductive material.

Art Unit: 1771

The applicant asserts that the combination of Iijima with Hashimoto is “invalid and meaningless to the one of ordinary skill in the art” because the object of the resin layer taught by Iijima is different from the object of the resin layer taught by Hashimoto. The examiner respectfully disagrees. Iijima does not specifically mention the use of aluminum oxide to make the resin conductive, but Iijima discloses that an electrically conductive material such as carbon powder or a metal powder may be used (column 6, lines 47-62). Hashimoto discloses that in addition to carbon powders and metal powders, it is known in the conductive resin art that aluminum oxide particles may be added to a resin to make it conductive (column 12, lines 40-54). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the conductive powder from any suitable conductive material, such as Al_2O_3 , because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

Conclusion

9. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 1771

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

atp

gtp 4/20/06

ANDREW T. PIZIALI
PATENT EXAMINER